I CLAIM:

1. A method of cutting steel with a cutting torch to reduce slag adherence to a cut edge of the steel, comprising steps of:

commencing a cut at a first side of the steel;

moving the cutting torch in an arcuate path shaped to continuously aim a cutting flame of the cutting torch at a fixed point located at a bottom of the first side of the steel; and

following the arcuate path to keep the cutting flame aimed at the fixed point until the steel is cut.

2. A method as claimed in claim 1 further comprising steps of moving the cutting torch transversely relative to the steel, while maintaining the cutting torch stationary relative to a longitudinal axis of the steel.

3. A method as claimed in claim 1 further comprising steps of synchronously moving the cutting torch and the steel in a direction parallel with a longitudinal axis of the steel, while moving the cutting torch transversely relative to the steel along the arcuate path.

4. A method as claimed in claim 1 further comprising a step of returning the cutting torch to a starting position after the steel is cut.

5. An apparatus for cutting steel to reduce slag adherence to the steel, comprising a cutting torch and means for moving the cutting torch in an arcuate

path to ensure that a cutting flame of the cutting torch is continuously aimed at a fixed point at a bottom of one side of the steel.

6. An apparatus as claimed in claim 5 wherein the means for moving comprises a track forming the arcuate path for guiding the cutting torch movement and a drive mechanism operatively connected to the cutting torch to move the cutting torch along the track.

7. Apparatus as claimed in claim 6 further comprising a frame for supporting the track and the drive mechanism.

8. An apparatus as claimed in claim 6 wherein the drive mechanism comprises a linkage system for converting a rotational movement of a rotating shaft into the movement of the cutting torch along the track.

9. An apparatus as claimed in claim 8 wherein the linkage system comprises:

a sleeve having an internally threaded axial bore connected to the cutting torch and rotatable about an axis perpendicular to both a plane determined by the track and the internally threaded axial bore;

a drive shaft having a free end and an end connected by a universal joint to the rotating shaft, the drive shaft including external threads for threadingly engaging the internally threaded axial bore through the sleeve, so that when the rotating shaft rotates the drive shaft, the sleeve is urged along the drive shaft and the

drive shaft pivots about an axis that extends through the universal joint, thereby causing the cutting torch to move along the track.

10. An apparatus as claimed in claim 9 wherein the rotating shaft is rotated by a motor mounted to the frame.

11. An apparatus as claimed in claim 10 wherein the drive mechanism further comprises a gearbox connected between the motor and the rotating shaft.

12. An apparatus as claimed in claim 6 wherein the drive mechanism comprises a fluid cylinder pivotally mounted to the frame about an axis perpendicular to a plane determined by the track, the fluid cylinder being pivotally connected to the cutting torch so that when the fluid cylinder is operated, the fluid cylinder urges the cutting torch along the track.

13. An apparatus as claimed in claim 12 wherein the fluid cylinder is a pneumatic cylinder.

14. An apparatus as claimed in claim 12 wherein the fluid cylinder is a hydraulic cylinder.

15. An apparatus as claimed in claim 8 wherein the frame comprises means for releasably gripping the steel with the frame, in a position such that a longitudinal axis of the steel is perpendicular to the plane determined by the track.

16. An apparatus as claimed in claim 15 wherein the frame is movable along a path parallel to the longitudinal axis of the steel.

17. An apparatus as claimed in claim 13 wherein the drive mechanism comprises:

a rack and a pinion for converting the movement of the frame into the rotational movement of the rotating shaft, the rack being mounted to a stationary support and the pinion being affixed to the rotating shaft, which is rotatably mounted to the frame.

18. A method of cutting steel billets from a continuous cast steel stand to reduce slag adherence to a cut edge of the billets, comprising steps of:

commencing a cut at a first side of the steel strand;

moving the cutting torch in an arcuate path shaped to continuously aim a cutting flame of the cutting torch at a bottom corner of the first side of the steel strand; and

following the arcuate path to keep the cutting flame aimed at the bottom corner until the steel strand is cut to form the steel billet.

19. An apparatus for cutting a steel billet from a continuous cast steel strand to reduce slag adherence to cut edges of the steel billet, comprising a cutting torch and means for moving the cutting torch in an arcuate path to ensure that a cutting flame of the cutting torch is continuously aimed at a bottom

corner of one side of the steel strand until the steel billet is cut from the steel strand.

20. An apparatus as claimed in claim 19 wherein the means for moving the cutting torch comprises:

an arcuate track for supporting the cutting torch; and

means for moving the cutting torch along the arcuate track at a predetermined rate required to cut the steel strand to form the steel billet.